

Amendments to the Claims:

1. (Currently Amended) A system of controlling and triggering a TRIAC (TR), the TRIAC comprising a gate (G), the TRIAC (TR) being connected to a load, the gate (G) being electrically connected to a power unit (~~3~~) that actuates the TRIAC (TR) for selectively applying a network voltage (V_{AC}) to the load and enabling the circulation of an electric current (i_c) in the load, the system comprising:

- a voltage detection unit for detecting gate (~~1~~) voltage;
- a detection unit for detecting the passage of the feed network voltage (~~2~~) by zero;
- a power unit (~~3~~); and
- a control unit (~~4~~);

the voltage detection unit (~~1~~) being electrically connected to the control unit (~~4~~),
the control unit (~~4~~) establishing ~~[[a]]~~ an adjustable gate (G) voltage limit value (+limit, -limit), and generating a pulse at the gate (G) of the TRIAC (TR) to keep it in conduction,
the pulse at the gate (G) being generated from a comparison between the voltage limit value (+limit, -limit) established by the control unit (~~4~~) and a voltage measured at the gate (G) from the gate (~~1~~) voltage detection unit.

2. (Currently Amended) A system according to claim 1, wherein the control unit (~~4~~) measures the electric current (i_c) and adjusts the voltage limit value (+limit, -limit) in a proportional way to the current (i_c) value measured.

3. (Currently Amended) A control system according to claim 2, wherein the control unit (~~4~~) generates the pulse at the gate (G) of the TRIAC (TR) in previously established a measurement time (t_M), the measurement time (t_M) occurring before the passage of the current (i_c) by zero.

4. (Currently Amended) A system according to claim 2, wherein the control unit (~~4~~) obtains the current (i_c) value from a current sensor (~~5~~).

5. (Previously Presented) A system according to claim 2, wherein the adjustment of the limit value (+limit, -limit) is made by means of the equation: $\pm Limit = k \times I_c$, wherein k is a previously determined proportionality constant.

6. (Currently Amended) A system according to claim 2, wherein the adjustment of the limit (+limit, -limit) is made by means of a table of preestablished values stored in the control unit (4).

7. (Currently Amended) A system according to claim 1, wherein the detection unit (4) for detecting voltage at the gate (G) comprises a comparator (CP₁) electrically connected to the gate (G) of the TRIAC (TR) and to a digital-to-analog (D/A) converter, the comparator (CP₁) receiving the signal of the voltage at the gate (G) of the TRIAC (TR) and a signal generated by the D/A converter, the D/A converter receiving a digital signal generated by the a control central (44), the signal generated by the control central (44) establishing an adjustment voltage value, the adjustment voltage value being equal to the limit values (+limit, -limit).

8. (Currently Amended) A system according to claim 7, further comprising a power unit (3), the power unit (3) being associated to the control unit and generating a voltage pulse at the gate of the TRIAC (TR) upon a command from the control central (44).

9. (Currently Amended) A system according to claim 7, wherein the control unit (4) comprises a digital-to-analog (D/A) converter, the digital-to-analog converter generating the adjustment voltage value.

10. (Currently Amended) A system according to claim 8, wherein the pulse at the TRIAC (TR) is generated when the control central (44) detects a transition of level of the comparator (CP₁) output.

11. (Currently Amended) A system according to claim 8, wherein the control central (44) commands the digital-to-analog (D/A) converter to commute between a positive voltage limit (+limit) to a negative limit (- limit) and vice-versa at every transition received by the comparator

(CP₁).

12. (Previously Presented) A system according to claim 8, wherein the voltage of the gate (G) of the TRIAC (TR) is applied to the comparator (CP) by means of a resistive divider (R₁, R₂).

13. (Previously Presented) A system according to claim 12, wherein the resistive divider (R₁, R₂) is formed by resistors of the same value.

14. (Currently Amended) A system according to claim 7, wherein the digital-to- analog (D/A) converter is internal with respect to the control central ~~(44)~~.

15. (Currently Amended) A system according to claim 7, wherein the comparator (CP₁) is internal with respect to the control central ~~(44)~~.

16. (Currently Amended) A system according to claim 7, wherein the power control unit ~~(3)~~ is an internal switch of the control central ~~(44)~~.

17. (Currently Amended) A method of controlling the triggering of a TRIAC (TR), the TRIAC comprising a gate (G) and being electrically connected to a network voltage (V_{AC}), the TRIAC (TR) being selectively actuated upon a pulse at the gate (G) to apply the network voltage (V_{AC}) to a load, enabling the circulation of a current (i_c),

a single comparator (CP₁) being associated to the gate (G) of the TRIAC (TR),

the method comprising:

applying a pulse at the gate (G) when the voltage limit value (+limit, - limit) at the gate (G) has been detected, the pulse being generated from a transition at the comparator (CP₁), the comparator (CP₁) comparing the voltage limit ~~voltage~~ value (+limit, -limit) at the gate (G) and a voltage measured at the gate (G),

commuting an input of the comparator (CP₁) from the positive voltage limit (+limit) ~~and~~ to a negative limit (-limit) and vice-versa at every transition received by the comparator (CP₁).

18. (Previously Presented) A method according to claim 17, wherein, prior to the step of

applying the pulse at the gate (G), said method comprises the steps of:

measuring the current (i_c) circulating in the load, and
adjusting the level of the voltage value at the gate (+limit, -limit) proportional to the level of the current (i_c)

19. (Previously Presented) A method according to claim 18, wherein, in the step of adjusting the voltage limit value (+limit, -limit), the equation: $\pm Limit = k \times i_c$ is applied, wherein k is a proportionality constant.

20. (Previously Presented) A method according to claim 18, wherein, in the step of adjusting the voltage limit value (+limit, -limit), there is a step of reading a table of pre-established values.

21. (Previously Presented) A method according to claim 18, wherein the voltage pulse at the gate (G) has a duration sufficient for the current circulating in the TRIAC (TR) to reach a latch value.

22. (Previously Presented) A method according to claim 21, wherein the first pulse of the gate (G) is commanded from a measurement of passage of the network (V_{AC}) by zero.

23. (Currently Amended) A method of controlling the triggering of a TRIAC (TR), the TRIAC comprising a gate (G) and being electrically connected to a network voltage (V_{AC}), the TRIAC (TR) being selectively actuated upon a pulse at the gate (G) to apply the network voltage (V_{AC}) to a load, enabling the circulation of a current (i_c),

the method comprising the steps of:

applying a pulse at the gate (G) when the current value (i_c) reaches a minimum value, establishing a voltage limit value (+limit, -limit) at the gate (G) to generate the pulse at the gate (G) of the TRIAC (TR) for keeping it in conduction, the pulse at the gate (G) being generated in a previously established measurement time (t_M), the measurement time (t_M) occurring before the passage of the level of the current (i_c) by zero,

measuring the current (i_c) that circulates in the load, and

adjusting the level of the voltage limit value (+limit, -limit) at the gate (G) by a control unit in a proportional way to level of the current (i_c).

24. (Previously Presented) A method according to claim 23, wherein the current (i_c) is continuously measured.

25. (Previously Presented) A method according to claim 24, wherein, in the step of applying the pulse at the gate (G) of the TRIAC (TR_1), regulating the level of voltage in the load from the delay in generating the pulses at the gate (G).